Technical Information

Honeywell

TrendManager Suite®

PC Application Software Configuration and Analysis Tool Specifications

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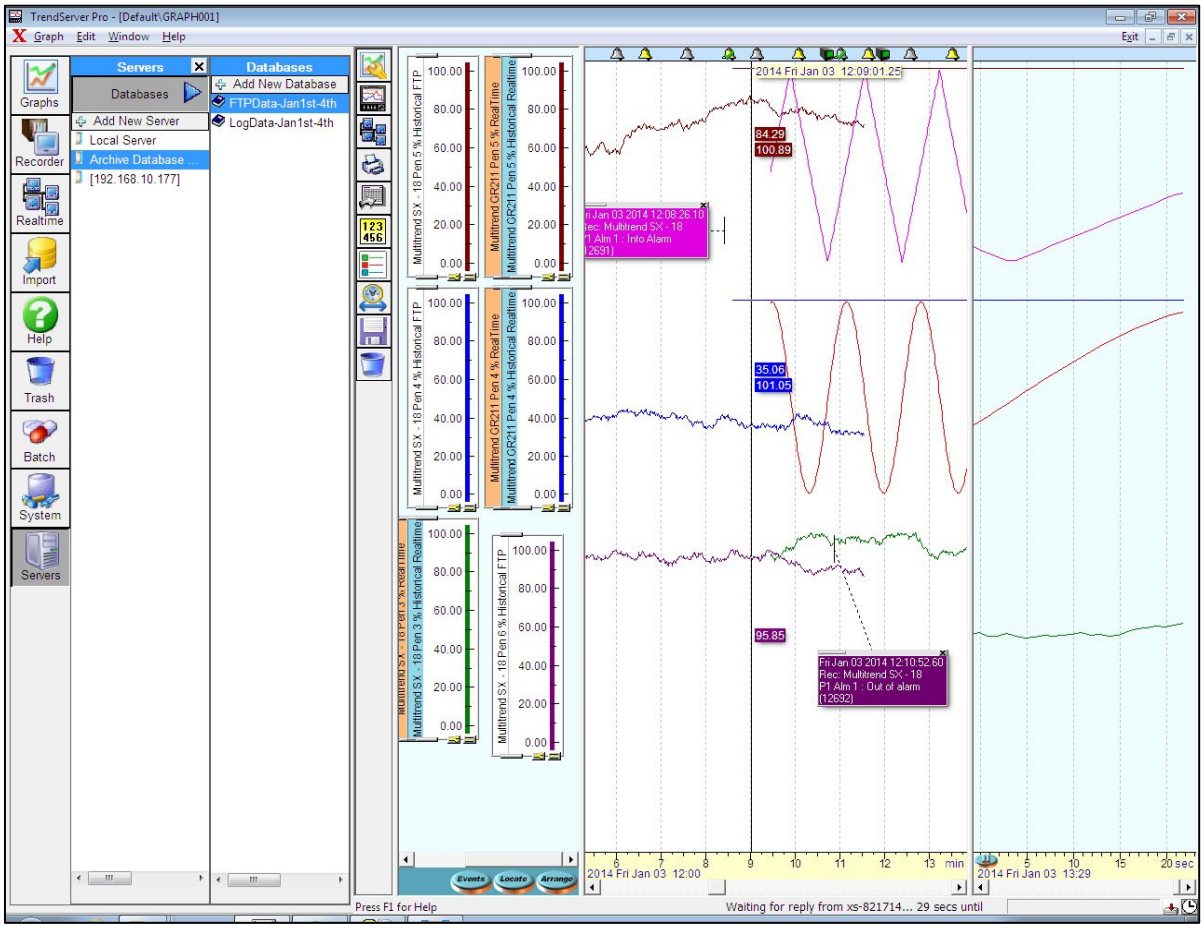
The TrendManager Suite software is a Windows™ based PC package that complements the Honeywell line of data acquisition products. It provides the capability to configure, analyze and network recorders for data acquisition.



- The TrendManager software ties your process together, providing access to the recorder through the plant LAN or the Internet, while keeping a high level of security.
- TrendManager provides the tools for real-time communication, data analysis and configuration for the entire family of GR Series, X Series and V5 paperless data recorders.
- The software is designed for use on Windows 7 (32 and 64bit - Professional, Enterprise and Ultimate Edition), Windows 8, Windows 2008 Server and Windows 2012 Server.
- The TrendManager Suite is easy to use and is available in English, French and German languages. The software is simple to use with "Drag-and-drop" operations, clear menus and logical configuration wizards to help the operator set up and analyze data from the recorders.
- IQ/OQ Protocol Documents to support process validation can be generated based on the configuration of the recorder. (optional, not included with TrendServer Pro)

Trend Manager Suite... Overview

The latest version of the Trend Manager Suite software supports V5, X Series and GR Series recorders.

TrendViewer

TrendViewer displays, graphs and prints the electronic data, stored and imported from the recorder's storage media. It is available at no charge and is shipped with every Honeywell paperless recorder.

TrendManager Pro

TrendManager Pro is an advanced data analysis/archiving software package, providing full configuration of the TrendView recorders.

TrendManager Pro is a stand-alone package that provides the user the ability to create recorder configuration, data archiving, graphing and printing. TMP also allows data to be exported using comma separated variables (CSV) format that can be imported into other computer software applications. TMP imports data from various Honeywell recorders, and stores the data individually in a secure database on a PC for graphing, analysis, adding comments, later retrieval, printing and export. TMP has a Concurrent Batch Mode facility where markers can be entered via the recorder or TrendManager/Server to create separate batches of data that can be viewed, graphed and exported to a spreadsheet. TMP allows the user to set up the recorder's Events system including setting up Scheduled Events, User Counters, Embedded Process values and Present markers for easier configuration.

TrendServer Pro

TrendServer Pro is a fully network aware software package for real-time viewing and archiving of data via communications to the recorder. It supports all the capabilities of TrendManager Pro plus real-time data acquisition and FTP access. TrendServer Pro provides secure multi-level, multi-user access to the recorder data by various departments with security. Standard features of TrendServer Pro include data archive tools, graphing, printing, import and export data facilities.

TrendServer Pro with OPC Server - provides the same functions as the TrendServer Pro but includes the added function of an integrated OPC DA 2.0 compliant Server to allow easy interfacing to third party HMI software packages that support an OPC Client. This provides a real-time interface between servers and clients.

Modbus Profile Configuration Tool - this is a tool that comes as part of the TrendServer Pro software that allows the user to set up Modbus Device Profiles for use by the Communications Server. It allows the user to edit existing Modbus profiles or create new ones for alternate Modbus devices other than the TrendView recorders to get real time data into TrendServer Pro. It can also be used to export Modbus profiles from one system so that they can be imported into another system. It is used for enabling the setup of Modbus communications with non-Honeywell devices that support floating point input registers in their Modbus memory map. This allows Modbus devices other than the TrendView recorders to get real time data into Trend-Server Pro.

Communications Server

The Communication Server is supplied with TrendServer Pro. It manages real-time communications, distributed access to the stored data, time synchronization over RS-485 and Ethernet networks is only for V5, not X Series or GR Series. It is also available with an OPC DA 2.0 compliant Server to make it easier to interface third party HMI software packages that support an OPC Client. The Communication Server provides security for the transmission and storage of process data.

IQOQ Protocol Document (Option with *TrendServer Pro only*.)

IQOQ Protocol Document Custom built IQOQ reports can be generated based on the configuration of the recorder. The configuration can be validated as a process of confirming that a piece of equipment or process meets the stated requirements to produce a regulated product. **See "IQOQ Protocol Document" on page 10.**

Database Management Tool

The Database Management Tool is a separate software application that is supplied with TrendServer Pro software. It provides the user with the ability to backup, sort, archive, move and copy the data stored by the TrendManager Pro and TrendServer Pro Software. **See "Database Management Tool" on page 13.**

Batch Report Tool

This improves on the creation of specific Batch reports from TrendManager or TrendServer database to analyze and document specific batch process. This tool uses the recorder batch information that has been imported into the TrendManager software, eliminating the error prone steps of manually entering the data into a spreadsheet application. This tool allows a user to generate separate batch report in a secure PDF format to document the final results of the batch process.

The batch report contains the following details as part of the report.

Features	TrendViewer	TrendManager	TrendServer
Data Conversion Tool to import, graph, save and export data from other Honeywell devices into the TrendManager Software	✓ (no export mode)	✓	✓
Import data from removable media	✓	✓	✓
Print all graph data and recorder configurations	✓ (graph data only)	✓	✓
Operates in Window™ 7 (32 and 64 bit -Professional, Enterprise and Ultimate Edition), Windows 8, Windows 2008 Server and Windows 2012 Server.	✓	✓	✓
Full Configuration of TrendView Recorders		✓	✓
Archive data on integral secure database		✓	✓
E-mail recorder configurations and data on www **		✓	✓
Concurrent Batch Mode		✓	✓
Export using CSV format files		✓	✓
Enable Fuzzy Logging		✓	✓
Events system including user counters and reports		✓	✓
AMS2750 survey setup		✓	✓
Password protection - Full user traceability			✓
Export using OPC links			✓
Communicate with recorders using RS485 interface			✓
Communicate with recorders using Ethernet TCP/IP			✓
Distribute all recorder data over LAN plant-wide			✓
FTP or Secure Communication Interface over Ethernet			✓
Web browse a recorder			✓
Send setup to recorder via Ethernet			✓
Export using OPC links			✓
Audit trail manager			✓
Relating data retrieval used for graphing & logging			✓
Replay of historical and Realtime data using a split screen format.			✓
Enable Modbus and Modbus X via Ethernet or RS485*			✓
Comms Server manages the communication status of the recorder			✓
Remote access to other servers via Ethernet			✓
Modbus Master and Communication with slave over RS485 or Ethernet.			✓
IQOQ Protocol Documentation (option with TSP only)			✓
View Archived Databases			✓

* RS485 is available as an option on the eZtrend QXe

** not featured on the X Series and GR Series Recorders

Features

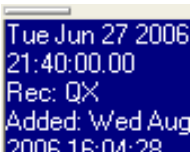
TrendViewer Features

TrendViewer provides the ability to view and print the graph data that has been imported from the recorder's removable storage media. It provides a graph screen that displays the currently imported data along with the associated events. Only data from a single recorder can be imported. A tabular listing of the data is not available in TrendViewer; this is a TrendManager Pro function. TrendViewer is supplied with each recorder and no unlock code is required to install it.

TrendManager Pro Features

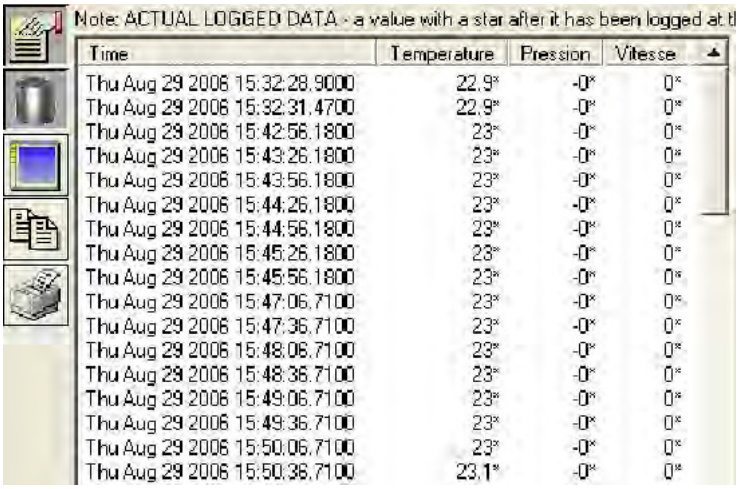
TrendManager Pro includes all the features of the TrendViewer software plus it supports the configuration of the Honeywell' TrendView paperless recorders, analysis of the data and the exporting of data to other third party spreadsheet (like Microsoft Excel or Lotus 123) packages.

- Import of data in the local databases via removable media. TrendManager Pro allows for the importing of data from a variety of devices –Minitrend, Multitrend and eZtrend recorders, Minitrend V5, Multitrend Plus V5, eZtrend V5, Circitrend V5, Teletrend V5, Multitrend V5 and V4 recorders.
  Also VRX Recorders, DPR180/250, UMC800, HC900, with data storage. These Honeywell devices including actuators, DR4500, DR4300 Circular Chart Recorders, DPR100 Strip Chart Recorders and UDC Controllers have Realtime capabilities.
  When imported, the new data is automatically recognized and stored in the correct place in a secure database. Remembering file names or labelling the storage media is not necessary. The recorders or pen data from the recorder can be dragged into the graph window for viewing. Reviewing of the data files does not require knowledge of file structures or recall of cryptic file names.
- Saving and organizing graphs - Once a particular graph has been setup, it can be saved - When reopened it will display all the data, including any data imported while the graph was closed. Graphs can be saved and organized in graph folders.



- Multiple Trends: data from different sources can be displayed and reviewed together on the same graph; multiple graphs can show the same trend with different scale zooms and time spans.
- User Added Comments - User comments can be added to the data on any graph to aid in understanding any particular point of interest; these are embedded with the data and cannot be modified (X-Series TMP or higher) or erased once the graph has been saved. A User Added Comment Block is shown here.
- Export Data: supports the exporting of data to other third party spreadsheet (like Microsoft Excel or Lotus 123) packages; data can also be emailed. Exported as multiple spreadsheets or as a single spread sheet.
- Event/Batch Viewer: All the alarms, events markers, status messages, etc., are displayed on the graph with the measurement data, or on a tabular view with time and date stamps. Event/Batch details are displayed in the Event/Batch Viewer.
- Recorder Setup management: TrendManager Pro allows the creation, archiving (up to 26 setups per recorder), printing, copying of Honeywell V4, V5, X Series and GR Series paperless recorders setups, thus providing traceability in the management of configurations.

- Displays a tabular window: The Data Viewer screen displays an overview of data currently visible in the graph window, showing date, time and value for each pen in column form. This window can be resized to allow many pens to be viewed at once or the column width may be adjusted to suit the user needs by clicking on the gaps between the headings & dragging as in Excel. Individual rows can be selected and copied by clicking on them while holding down the Ctrl key or you can block copy all the data. There is a copy button so all the selected data can be copied to the clipboard and then pasted into programs such as Word or Excel. A print button will print all of the selected data or the complete window.



- Pen Data Source Viewer - This will provide information like Pen Name, Pen-Type, Recorder Name, Database Name, Server Name. Options are: Select all, selects all data, Copy selected data to clipboard which copies the selected data on to the Windows clipboard for pasting into such as Microsoft™ Word or Excel. To Print selected data click on the Print icon to generate two boxes, one to select the font required, then click OK followed by the print setup box.

Hardware Configuration Wizard

- **V5 Recorders** Allows you to enter all the recorder details for type of inputs, - Standard or Fast Scan, the quantity, set communications, either Ethernet or RS485/RS232 Trendbus or the Modbus RTU option via RS485 or Ethernet.
- **X Series Recorders** Setup includes Analogue Inputs, Outputs and Pulse options, Relay Alarm/Digital Input/Output card options. Standard fit is Modbus TCP/IP (slave mode) and web over Ethernet (DHCP std) communications port and Modbus RTU (slave mode) via an RS485 port. RS485 is an option on the eZtrend recorder.
- **GR Series Recorders** Setup includes Analogue Inputs, Outputs and Pulse options, Relay Alarm/Digital Input/Output card options. Standard fit is Modbus TCP/IP (slave mode) and web over Ethernet (DHCP std) communications port and Modbus RTU (slave mode) via an RS485 port. RS485 is an option on the eZtrend recorder.
- **Recorder Set up** TrendManager Pro can be used to set up and configure a Honeywell TrendView recorder's from the PC. Parameters can be set as part of the configuration. These include General Set up information, e.g. Recorder Name, Description, Recorder ID and Serial Number, which is used throughout the software for identification purposes.
- **Field IO** Analog Inputs can be configured for type and range along with a label and any signal conditioning that may be required. Analogue Out, Pulse In, Alarm Digital IO are configured by selection of the appropriate menu button on the left. Linearisation tables can be set up to allow non-linear input signals to be displayed on the recorder.
- **Pen Set ups** Include Scaling information, engineering units, colour and thickness of trends, logging types and rates, math calculation, totalisation set up and alarm types and levels and Rolling Average. A pen or input setup can be copied instantly by 'dragging-and-dropping' the pen or input icon.

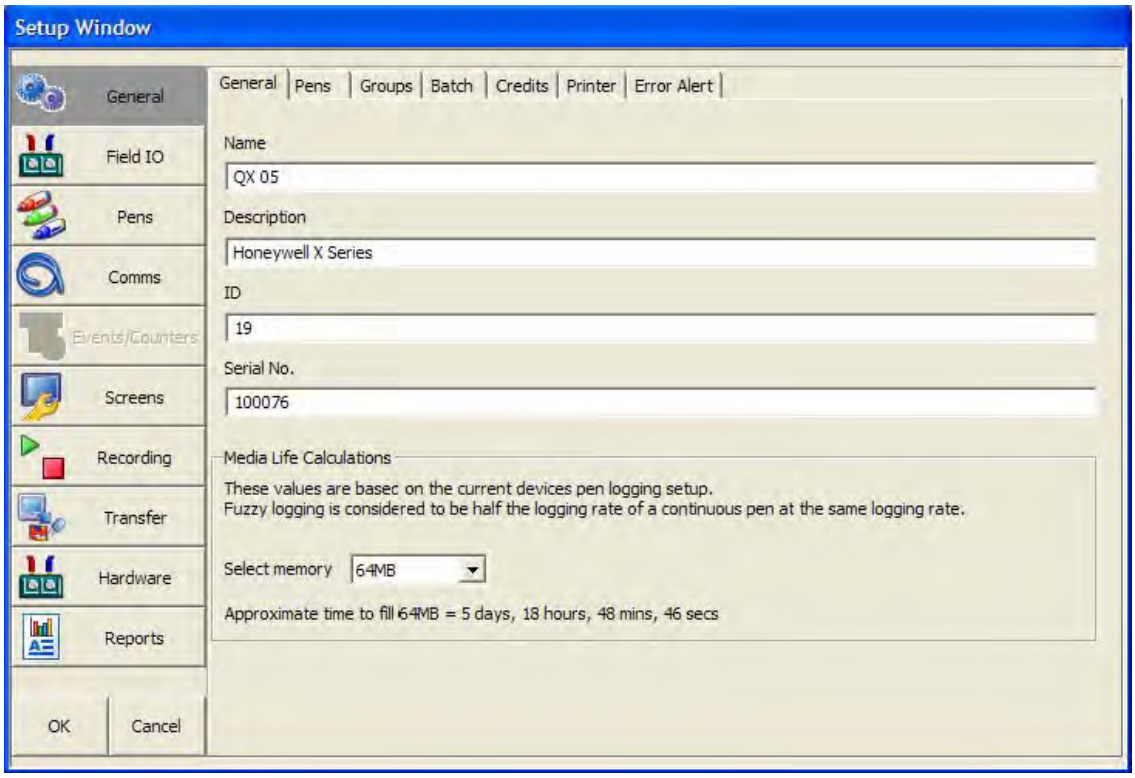


Figure 1.1 Hardware Wizard

- **Comms** Includes: Modbus - Communications protocol for Ethernet and RS485. Web - Browse your recorder using the web browse feature. Email - Setup email accounts to send alarm and event information. SNTP - Simple Network Time Protocols is a protocol for synchronising the clocks of computer systems and other devices over ethernet networks. TCP/IP - Transmission Control Protocol/Internet Protocol. A protocol for communication between computers, recorders and other devices. Network Admin - Network Admin is required for printers on a network and shared or work group printers. FTP - File Transfer Protocol. Used to transfer data to and from the recorder. Peer to Peer - Sets up the recorder to be identified on a network.
- **Events/Counters** Events are certain conditions or operations can be set up and logged according to the time and date of the occurrence. Subsequently events can be reviewed in a list or represented on a graph. Up to 16 User Counters are available and can be used as a part of the Events system. User Counters can be set up as a Cause or an Effect of an Event. Preset Markers can be configured and used when applying a Mark to the chart through the event system, the alert system or manually.

  Counters - Up to 16 User Counters are available and can be used as a part of the Events system. User Counters can be set up as a Cause or an Effect of an Event.
- **Screen tab** - Brightness Control and Screen Saver Settings. Also included here is the Charts tab - Set up the chart speeds in three categories; Fast, Medium and Slow.
- **Recording tab**. Scheduled: Use this screen to set up a scheduled export of data. Storage Alarm: The storage alarm function is linked to the Error Alert system when there is a requirement for a time period to be set to alert the user before the storage media is full.
- **Transfer** Enables the Import and export of data by selecting the path for the data to be imported from or exported to
- **Hardware** Can be added and removed according to the recorders current hardware setup. The hardware information in TMP should always be the same as that of the recorder.
- **Reports** Can be generated manually or on a periodic basis using the event system to show daily/weekly/monthly totals, max mins, averages etc., the reports can be printed, e-mailed as attachments or exported to the external media. The reports will be in RTF format for use in MS Word or other compatible word processors.

TrendManager Suite Interface

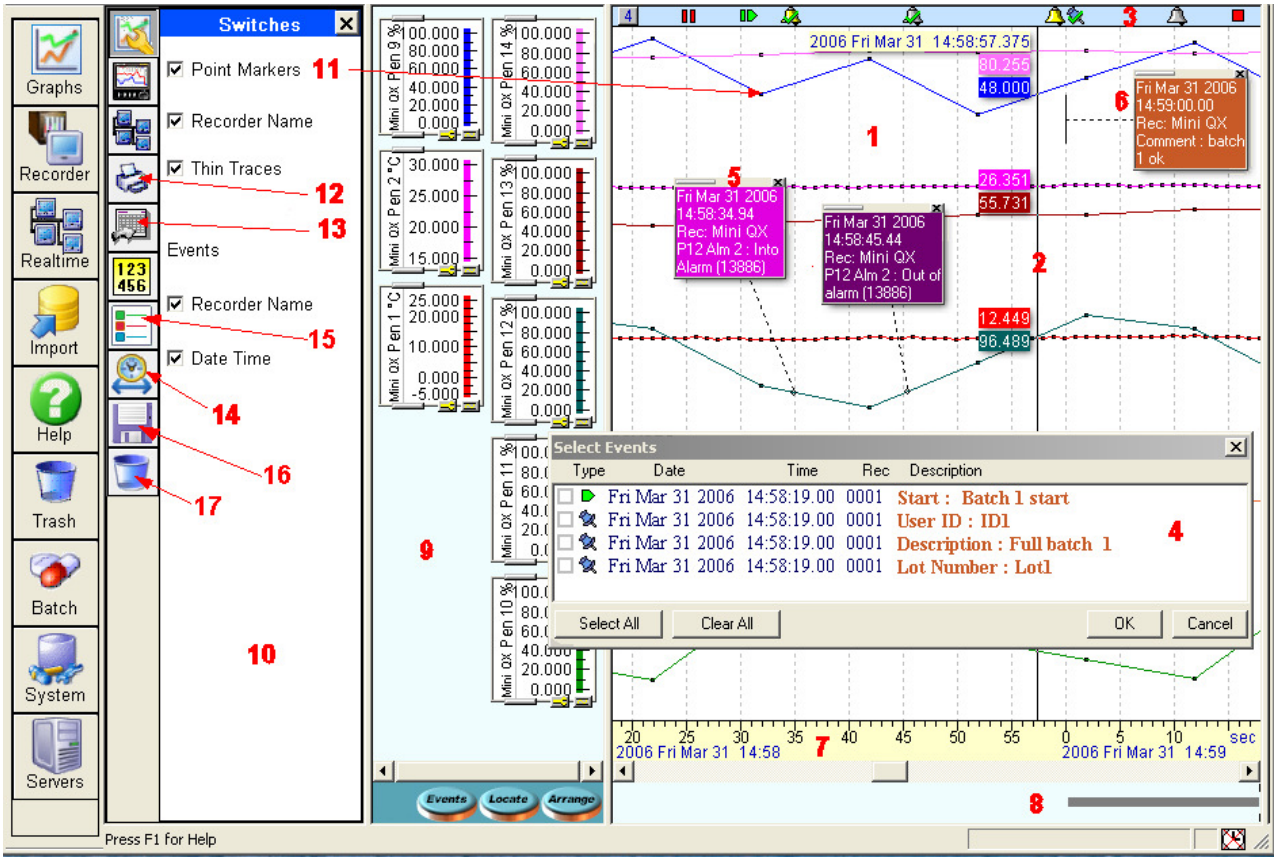


Figure 1.2 User Interface

1. **Trend area** is the area where the trend lines for the recorders are displayed. Colours and thickness of the trends are the same as displayed on the recorder.
2. **Cursor:** right click the mouse, - process values, date and time are displayed around a vertical cursor line.
3. **Event bar:** shows in time when various system, alarm, digital, user and event/batch marker events occurred.
4. **Events box:** Displays a group of events/batch events that are in a numbered tile in the Event bar. (Events not available for Realtime and Logged data via Modbus).
5. **Event Detail boxes**: The details of the events are displayed and printed on the graph in the Event Information boxes.
6. **User comments/Batch events** appear on the printout and are saved with the data.
7. **Time and date bar** provides time and date by month, day, hours, minutes, seconds and milli-seconds. Trend data can be expanded or collapsed in time by using the mouse left and right click in this area.
8. **Data Locator** Gives you a quick view of where the recorded data is represented as a grey bar.
9. **Scale area** is the area that displays all of the pen scales, these can be arranged, expanded and moved to provide for the best viewing. Dragging a scale to the trash can removes the trend from the display without affecting the stored data.
10. **Option switches zone**: several display options are performed in this area.
11. **Point markers:** show the actual logged values with black dots.
12. **Print button:** prints the graph on the default printer.
13. **Export Button:** exports the data on the graph to excel or CSV (Comma Separated Variables) format.
14. **Clock button:** Defines the data to be displayed on the graph, (a Graph Set Time Span display menu shown here) appears. "Go to last" can be used to display automatically the last period of recorded data for the duration: 1 min., 5 min., 15 min., 30 min., 1 hr, 2 hr, 6 hr, 12 hr, 1 day, 5 days or 7 days.

15. **Graph pen Source data:** This will provide information like PenName, Pen-Type, RecorderName, DatabaseName, ServerName.
16. **Save graph: Select to Save the current graph**
17. **Delete graph**: Drag and drop to delete graph

TrendManager/Server Updated Features

(TMP software release 13 onwards and Recorder Firmware EP onwards)

Batch Mode

The "Batch Mode" facility comes as standard with TrendManager Pro and TrendServer Pro version 5.0.4.0 and later. Batch Mode enhances the management of data collected in non-continuous processes (so-called "batch processing"), such as thermal treatment, sterilisation, food processing, chemical reactions, etc.

Concurrent batches can be set up in the recorder and are associated with a group of pens. The pens with in each group will belong to the batch that is controlled by that group. Batches can be controlled through the event system and batch markers are setup by the user and are used to identify and analyse batches of data. Supports up to 6 concurrent batches. Batch features include Pause chart when batch stopped, Batch Logging control, List driven data fields, Automated batch counters, Event driven batch control, Updated control and feedback, Batch mode State and Count in scripts/embedded variables.

On the recorder, command lines to Start, End, Pause, Resume or Abort a batch are logged via the "Batch Control " menu, by using the touch screen, a USB keyboard or a barcode reader. Other Batch markers can be added such as a Description, User ID, Comments, (Lot Number - X Series only).

The data is then collected by the usual means: media (disk or card), FTP, real-time communications and processed in Trend- Manager/Server Pro software.

Once imported, the batch identifiers are listed in a dedicated window. Batches can be sorted, filtered, searched by keywords or numbers. Selecting a batch automatically opens a graph containing all the pen data and all events relative to this batch. The graph can be saved, printed and exported in a quick and easy operation. Exported data can be defined to ensure only the exact data required is sent to an Excel spreadsheet.

Existing data can be searched by time and re-organized by batch names/numbers.
Batch Mode highlights:

- Retrospective Batches - Creating batches for existing historic graphed data for individual viewing, graphing and exporting to spread sheet.
- Seamlessly logging continuous data
- Comprehensive visible event and batch information displayed on the graph
- Elapsed batch time for comparison analysis
- Simple search for Batch data

On the recorder, batch data can also be paused, for viewing, and resumed. A batch can be aborted at any time, if so this will not register as a batch, a batch is only complete when it has been stopped. The Batch menu is the setup menu where you can configure all the Batch and Group properties before starting a batch.

TrendManager Pro is also used to setup pre-defined messages for "mark on chart", setup of the Email Alarm System, Event/ Batch Markers, Counters Control, and periodic Totaliser reset.

Batch Report Tool - see Batch Report Tool

The Batch Report Tool allows the user to quickly adjust the parameters of the report to focus on the important data within the recorded batch information. The Batch Report function is enabled via an unlock code which is entered the first time you go to run a Batch Report in the TrendManager Software.

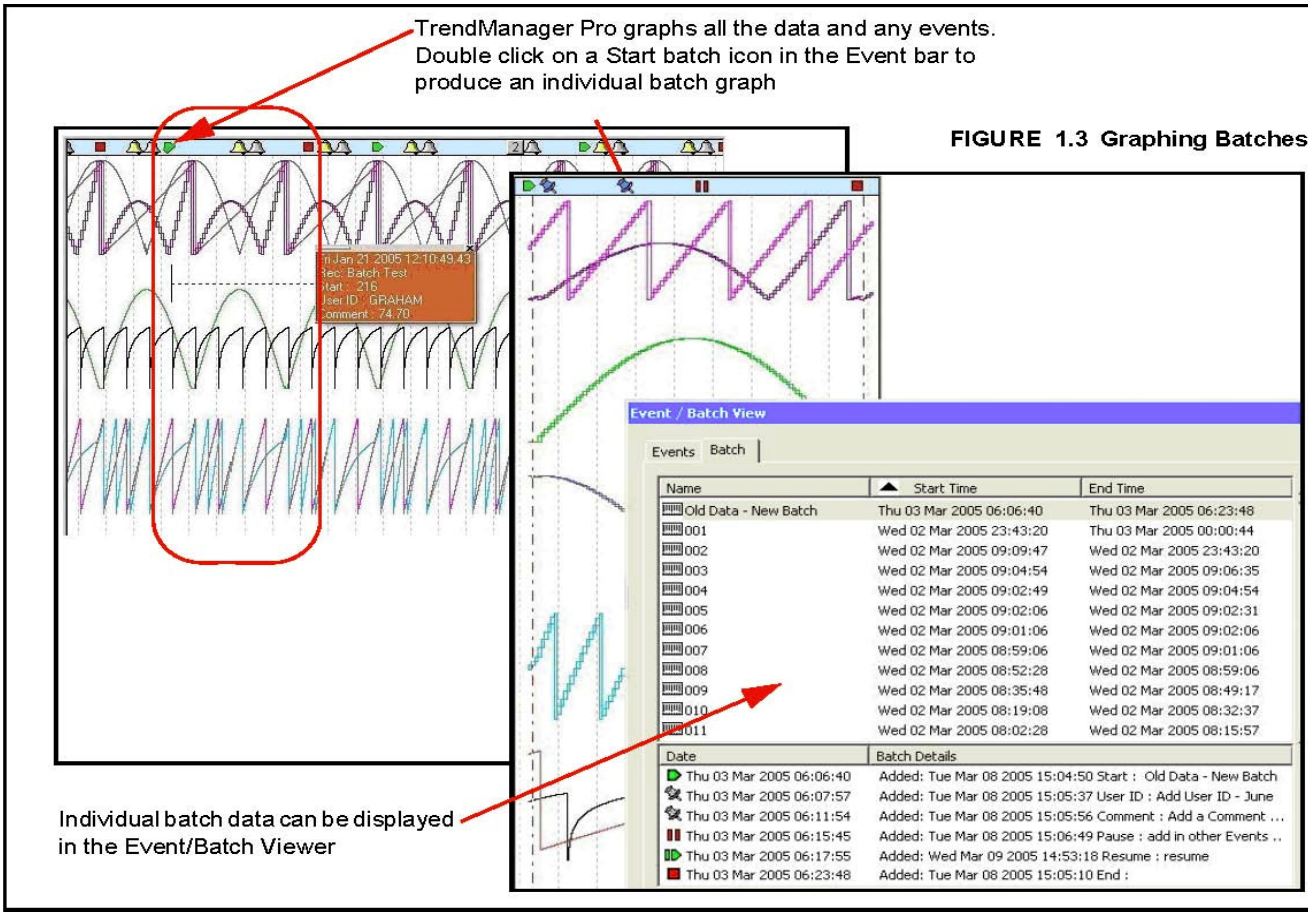

TrendManager Pro graphs all the data and any events.
Double click on a Start batch icon in the Event bar to
produce an individual batch graph
Event / Batch View
Events
Batch
Name
Start Time
End Time
Old Data - New Batch
Thu 03 Mar 2005 06:06:40
Thu 03 Mar 2005 06:23:48
001
Wed 02 Mar 2005 23:43:20
Thu 03 Mar 2005 00:00:44
002
Wed 02 Mar 2005 09:09:47
Wed 02 Mar 2005 23:43:20
003
Wed 02 Mar 2005 09:04:54
Wed 02 Mar 2005 09:06:35
004
Wed 02 Mar 2005 09:02:49
Wed 02 Mar 2005 09:04:54
005
Wed 02 Mar 2005 09:02:06
Wed 02 Mar 2005 09:02:31
006
Wed 02 Mar 2005 09:01:06
Wed 02 Mar 2005 09:02:06
007
Wed 02 Mar 2005 08:59:06
Wed 02 Mar 2005 09:01:06
008
Wed 02 Mar 2005 08:52:28
Wed 02 Mar 2005 08:59:06
009
Wed 02 Mar 2005 08:35:48
Wed 02 Mar 2005 08:49:17
010
Wed 02 Mar 2005 08:19:08
Wed 02 Mar 2005 08:32:37
011
Wed 02 Mar 2005 08:02:28
Wed 02 Mar 2005 08:15:57
Date
Batch Details
Thu 03 Mar 2005 06:06:40
Added: Tue Mar 08 2005 15:04:50 Start : Old Data - New Batch
Thu 03 Mar 2005 06:07:57
Added: Tue Mar 08 2005 15:05:37 User ID : Add User ID - June
Thu 03 Mar 2005 06:11:54
Added: Tue Mar 08 2005 15:05:56 Comment : Add a Comment ...
Thu 03 Mar 2005 06:15:45
Added: Tue Mar 08 2005 15:06:49 Pause : add in other Events ..
Thu 03 Mar 2005 06:17:55
Added: Wed Mar 09 2005 14:53:18 Resume : resume
Thu 03 Mar 2005 06:23:48
Added: Tue Mar 08 2005 15:05:10 End :
Individual batch data can be displayed
in the Event/Batch Viewer

FIGURE 1.3 Graphing Batches

AMS2750 TrendManager and TrendServer

AMS2750 Mode is an option that can be enabled in the credit system of the X Series recorder. AMS2750 is the specification that covers pyrometric requirements for thermal processing equipment used for heat treatment. TrendManager Suite supports the configuration of the recorder and has two capability modes to match with the mode set in the recorder.

In process mode sets of timers are configured to inform and alert the user to the status of certain conditions, these include: Temperature Uniformity Survey (TUS), System Accuracy Tests, Instrument Calibration due date, Control TC due date and TC Status.

In TUS mode the recorder is configured to run a survey based on sensor and furnace settings in the recorder. These must be configured in line with AMS2750 specification. Refer to the User manual for more details. A separate software program is used to generate the survey report using the TUS (temperature uniformity survey) file generated by the recorder.

TrendServer Pro Features

IQOQ Protocol Document

The IQOQ protocol product is for the eZtrend, Minitrend and Multitrend recorders. The manufacturer is obligated to execute a “Validation Protocol” for every piece of equipment that is associated with a “critical process”. The IQOQ feature aids in doing this and comes with the TrendServer Pro software when ordering the IQ/OQ part number (50032291-501). When ordering your IQOQ Protocol Tool two codes will be supplied; one for the TrendServer Pro software and one to register IQOQ during the setup. The CD based application generates customized IQOQ documentation for the specific recorder model and its associated options. System requirement of 4GB SRAM for generating IQOQ report.

The IQOQ report is documented evidence that the process will produce a consistent product that meets specification. The IQOQ report that is generated is Honeywell’s documentation package that provides verification that all aspects of the recorder installation adhere to Honeywell’s recommendations, appropriate safety codes, and approved company specifications and design intentions. The output is a PDF report containing the full configuration details of the recorder. This provides the user with the ability to demonstrate that they have standard operating procedures for operator training, written methods for the verification of the calibration of the system elements, and upkeep of the system.

Access control and traceability

The password system supports five levels of users and eight areas of access with ability to password protect functions within these areas – Graphing, Folders, Recorders, Database, Server, Import, Communications and Settings, etc. Up to 50 Users can be registered. All modifications and access are recorded in the Audit manager. A System Status window, which can be hidden, provides status information concerning communications.

Communications with recorders

TrendServer Pro is used to manage communications with the recorders and other network connected devices; this includes uploading set-ups over the communications link, file transfers manually or with the FTP scheduler or collecting data in real time using the integral Communications Server. It gives you a complete view of process and real-time data on your PC.

A separate modbus configuration tool is used to quickly setup communications between Trend Server Pro and other Modbus RTU compatible devices. FTP and real-time communications to the same database are not supported and that doing time synchronisation both by FTP and by real time is not recommended. The X Series and GR Series recorders use the Modbus comms protocol which does not support retrieving event data in Realtime or buffered Logged data. The Modbus Comms Protocol only supports getting real time analog data from the recorders and other network connected devices.

Sharing data over the Network

TrendServer Pro allows accessing to the databases remotely on any PC that is also running TrendServer and is connected to the same Local Area Network.

This allows the user to share data over the network and to perform such functions as:

- Logging real-time data on two different PCs simultaneously.
- Sending the data from the recorder, real-time to one PC, and by FTP, at given times, to another PC. Secure Comms available on the GR Series recorders
- Accessing the data stored on a server from other PCs (TrendServer must be installed on the client PCs, multiple licenses available).
- Installing the Communication Server and the Database on a central, backed-up server with an uninterrupted power supply to provide added security of the data.

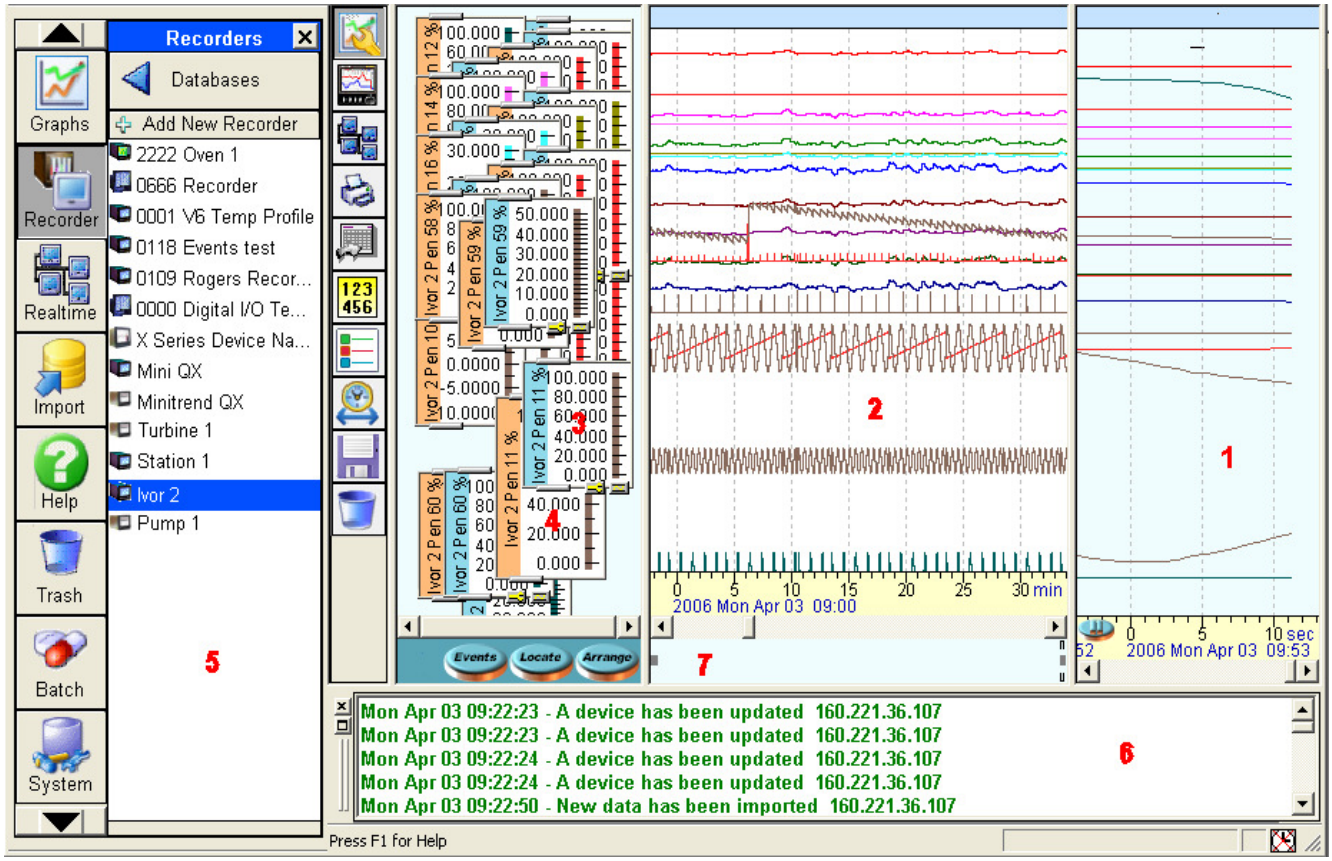


Figure 1.4 Interface Areas

TrendServer Pro provides the ability to view real time data **[1]** together with historical data **[2]**. These windows can be expanded or collapsed by dragging the viewing area to the right or left depending on what is most important to the user. Scale indicators **[3]** for each of the pens are available for viewing at the same time. These can be expanded and collapsed by using grab bars at the top and bottom of the scale display. The colour of the scale indicator signifies whether the data is historical data (blue) **[3]** or real time data (orange) **[4]**. White scales indicate FTP or disk data. Recorder data is displayed by dragging selected recorders **[5]** or pens from individual recorders into the graph window. A System Status window **[6]**, which can be hidden, provides status information concerning communications; the window will appear automatically if an error or connection problem occurs. Review of the data is aided with the use of the Data Locator **[7]** and the mouse to scroll forward and backward in time.

The review of data can be done in both the historical and real time data windows; the real time buffer can be set in the System parameters from 10 minutes to 2 hours. The real time window can be paused and a cursor bar allows the user to view the digital values. Other functions include Zoom In/Zoom Out using the right button on the mouse, switches are available to turn on or off selected display features like Point Markers of the actual data point, the Recorder Name on the bar graphs indicators and Event Message boxes to view as Thin Traces and the Date/Time of the Event Marker. Turning these off does not erase the data it only changes what is being displayed at the time.

Communications Server

The Communication Server is a software application supplied with the TrendServer software. It can be installed on a different PC than TrendServer to manage communications over the whole network (only one instance of the communication server is necessary on the network). Administrator rights are necessary for setup and operation.
The Communication Server manages the Real-Time communications with networked recorders using the Trendbus or Modbus protocol (only Modbus comms is available on the X-Series and GR Series recorders). The data acquisition rates are specified at the PC and can be different from the ones used in the setup of the recorder.
Real-time communications is the safest way of handling process data, since it does not rely on data transport via the removable media of the recorders and the data is stored in the secure database immediately after acquisition.

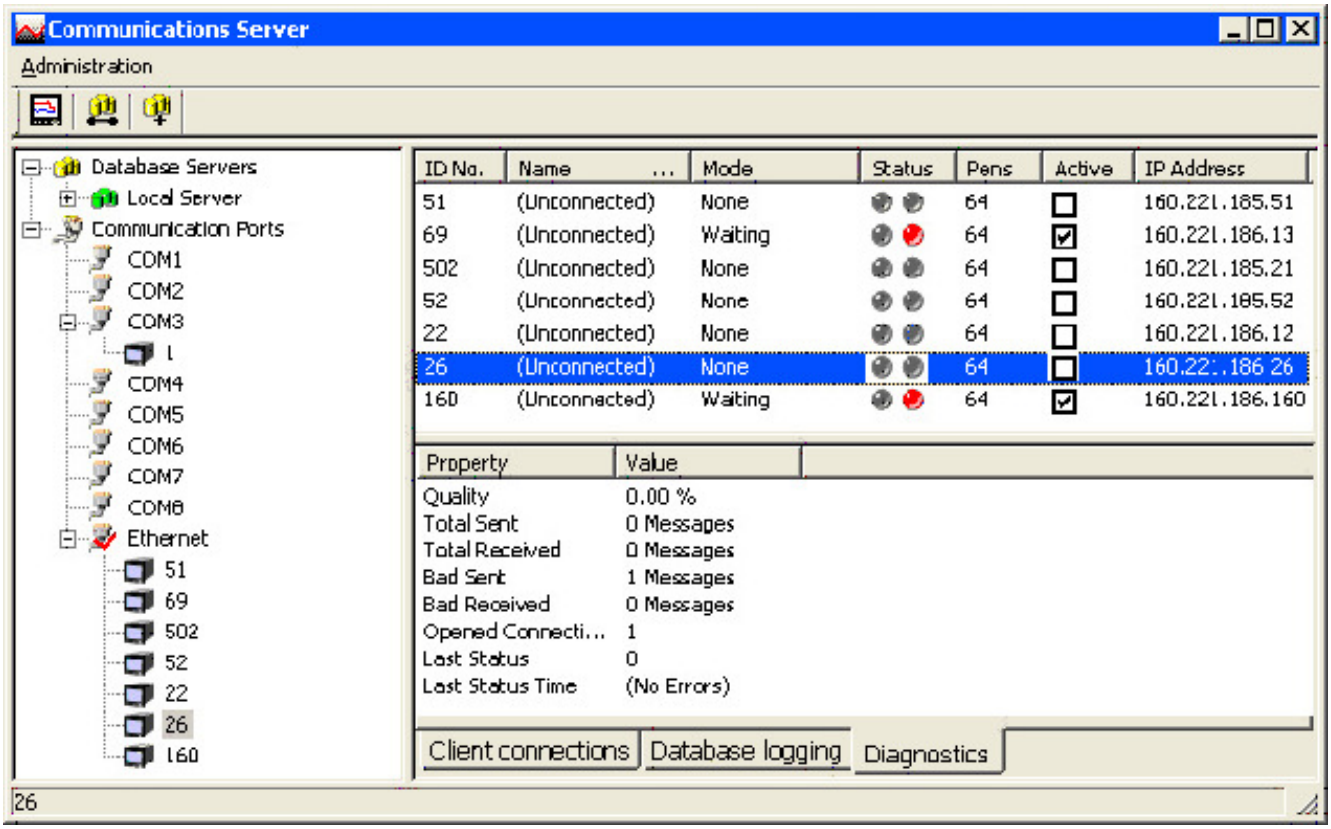


Figure 1.5 Communications Server User Interface

TrendView Historian

PC software that extracts data from TrendManager Suite databases and communicateswith various OPC HDA Clients (e.g. Matrikon) to analyze the Historical data of recorder. A separate unlock code is required to activate this software. TrendManager Suite installation is mandatory when using Trendview Historian.

Trendview Historian function uses OPC HDA to acquire the data, refer to 43-TV-25-41, Trendview Historian User Guide.

A Windows-based Client application is be used to view and access historical data from Trendview OPC Historian Server.

Database Management Tool

The Database Management Tool is an "offline" separate software application that is supplied with the TrendServer software. It uses a tree structure to view data files in TrendManager database folders as well as files on the PC hard drive.

The data files can be viewed and managed by Devices (all data for one recorder) or by Monthly Archives (one month's worth of data).

Using the Database Tool, portions as well as entire databases can be copied, archived, moved or deleted. Colour coded highlights of data files (shown in Green, Purple and Yellow in Figure 1.6 on page 13) are used to show if data is being stored to a different location other than the local databases. This allows data to be stored to a secure server that is backed up on a routine basis.

The data is still accessible with TrendManager Pro or TrendServer Pro, just as if it was still located on the local PC.

The Tabbed Window at the bottom of the Database Management Tool window provides a summary of operations or an Audit Trail of actions performed during each session.

There is an XML archive tool that can be used to export a local database as XML. The device folder created can contain a Device, Event and Logged pen information in schema format.

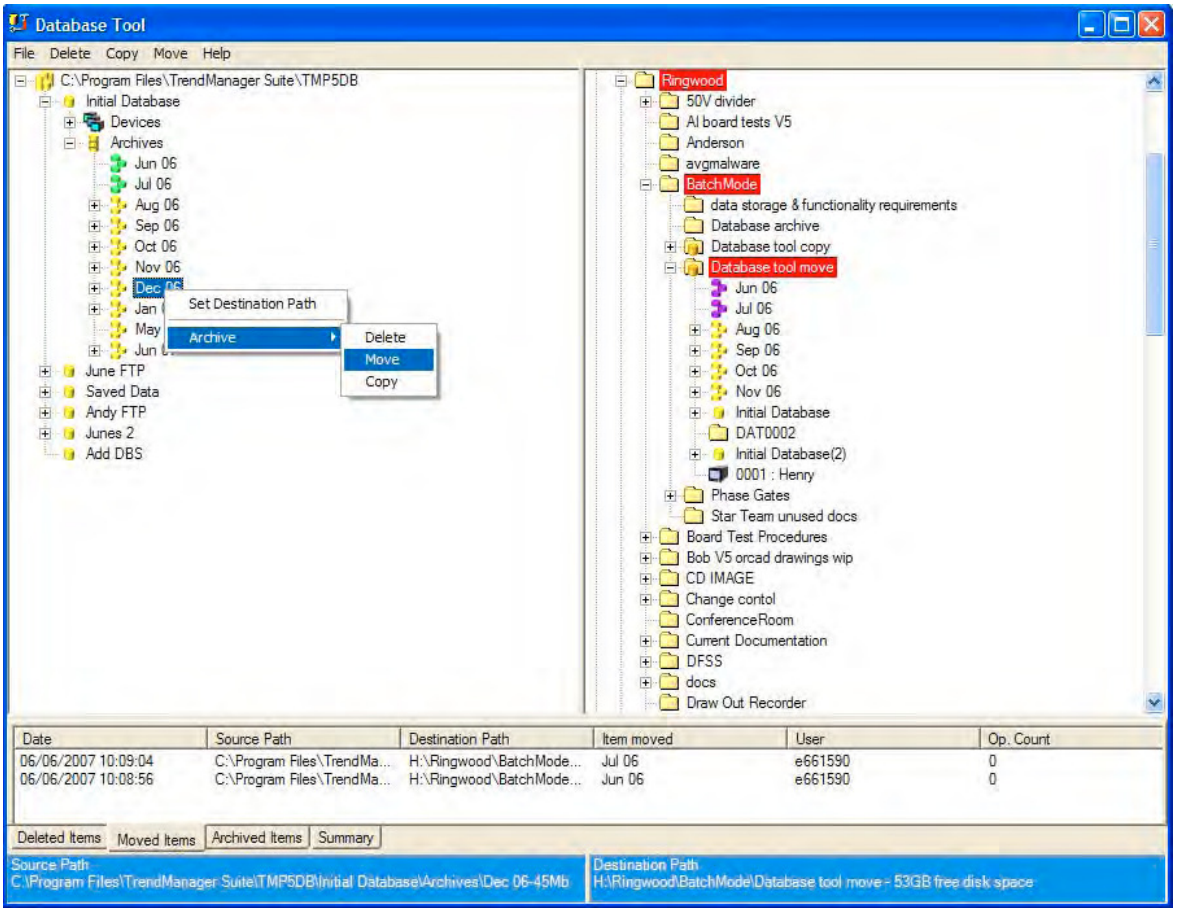
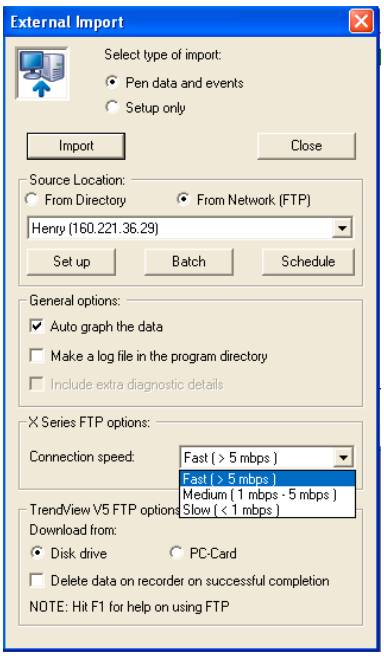


Figure 1.6 Database Tool User Interface

FTP Import.

Available on **TrendServer** ONLY.



TrendServer uses FTP/IP (File Transfer Protocol / Internet Protocol), this is the transfer of data between a computer and a recorder. Secure Comms available on the GR Series recorders.

TrendServer offers the ability to import data from recorders via an Ethernet connection. This is standard on all recorders with an Ethernet card.

Each recorder is identified by its name and a unique internet number known as an IP address (Internet Protocol Address). For more details on IP Addresses see your IT system administrator.

If the recorders and **TrendServer** are on the same local network, a number can be selected from a range of pre-allocated numbers.

Set up - Add, Edit or Remove the recorder you wish to import from.

Batch - Select a number of recorders required for importing via FTP.

Schedule - The Schedule button is for adding this recorder to a time/date schedule to import data.

FTP Scheduler

The FTP Scheduler downloads the data automatically from the media storage of the recorders and stores them in a database, based on specified days and time. The data acquisition rates are the ones specified in the setup of the recorder. FTP transfer is protected and secure; the files in the recorder cannot be accessed by any other application other than Trend Server Pro. FTP now has a Find Device facility, for X-Series and GR Series recorders, using the recorder's network serial number to locate the device.

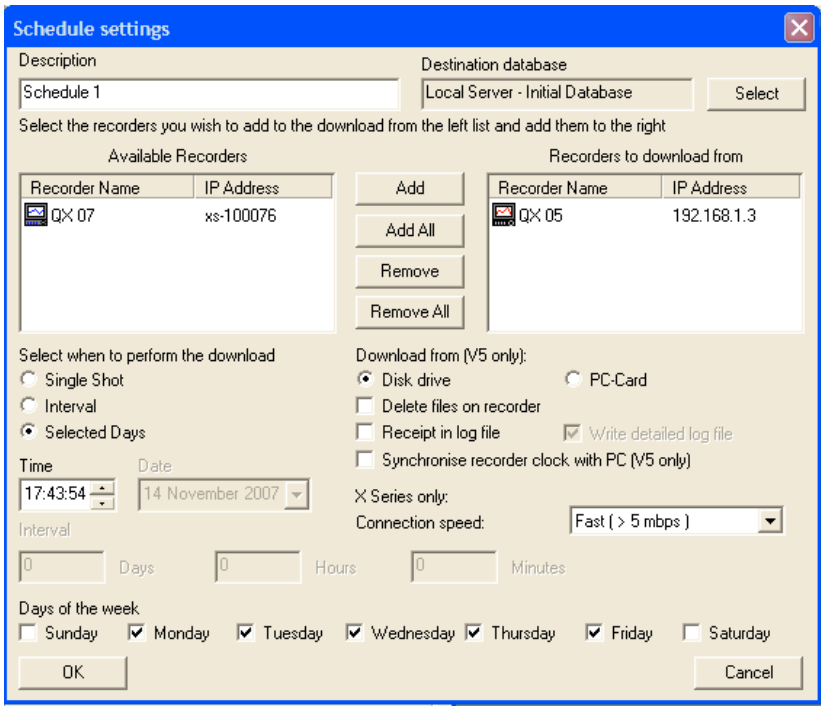


Figure 1.7 FTP Scheduler

Use the FTP Scheduler to transfer recorder setups and data at specified times.

Specification

System requirements	
PC Operating System (See Deployment diagram below)	Supports: Microsoft Operates in Window™ 7 (32 and 64 bit -Professional, Enterprise and Ultimate Edition), Windows Server 2008, Windows 8, and Windows Server 2012.
PC System (TrendViewer)	1 GHz Pentium processor or higher with a mouse, CD-ROM drive Monitor screen resolution 1024 x 768 minimum requirement, high colour 512 Mbyte of RAM, 50Mbyte free hard disk space 16 colour graphics, 24 bit recommended (Screen Designer only) Flash card reader or USB port for X Series recorders 3.5" floppy disk drive or PCMCIA for V5 recorders
PC System (TrendManager or TrendServer)	As for TrendViewer but with: 2 Gbyte Hard-drive free disk space, TCP/IP installed System requirement of 4GB SRAM for generating IQOQ report
V5 For RS-485 communications	RS-485 or RS-232 port with adapter (V5)
X Series Communications	Modbus TCP/IP (slave mode), web over Ethernet (DHCP standard) communications port Modbus RTU (slave mode) via an RS485 port. USB ports allow the use of an AS-CII barcode reader.
For FTP communications and setup transfer	Ethernet port, TCP/IP stack installed, Fixed IP addresses for all connected recorders.
For Real-time communications	Ethernet port, RS485 to RS232 adaptor, TCP/IP stack installed Fixed IP addresses for all connected PCs and recorders
For Database Management Tool	Same as TrendServer Pro. (Microsoft.NET framework needs to be installed) Use with TrendManager software version 5.0.3.24 or higher
Batch Mode	Available with TrendManager Pro and TrendServer Pro only. Use with TrendManager/Server Pro software version 5.0.4.0 or higher

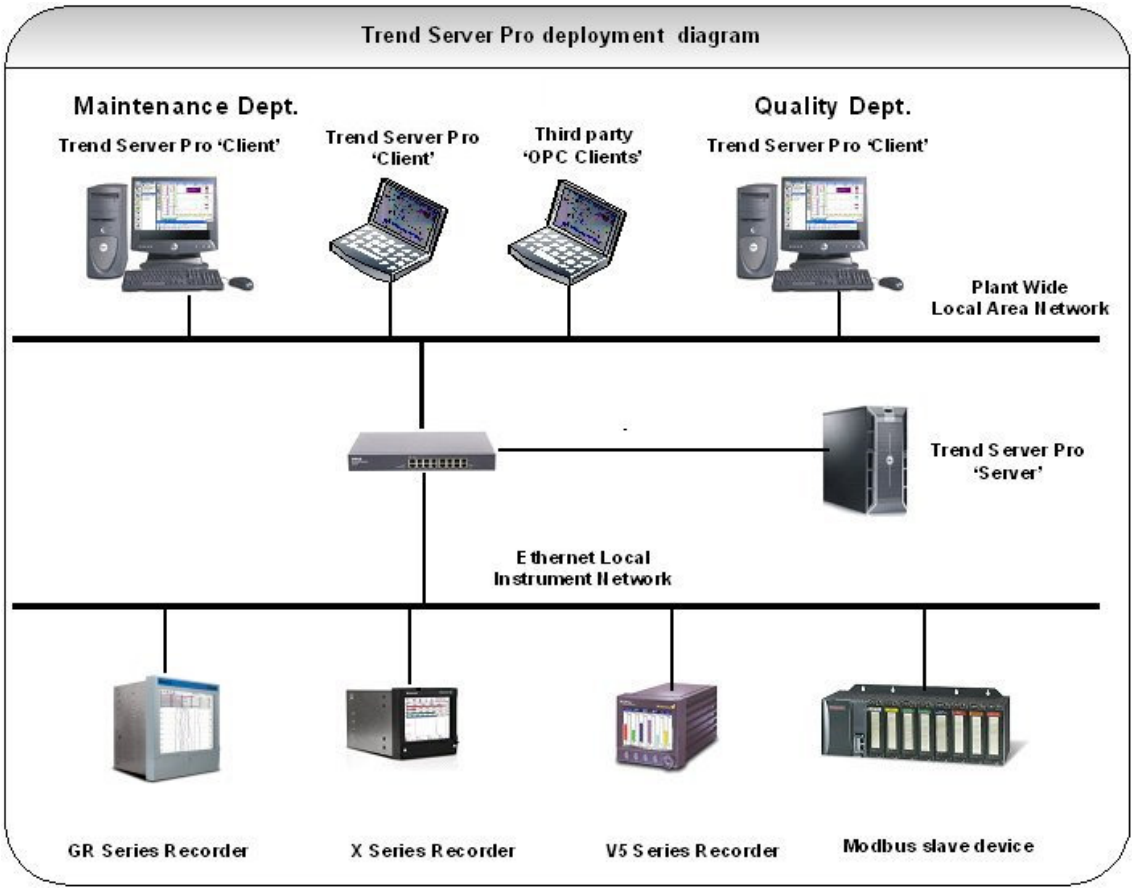


Figure 1.8 TrendServer Pro Deployment

Features	
Display and print time scales	From 3.5 ms/cm to 1.15 month/cm
Data format	Honeywell proprietary binary encryption
Protocol used for Recorder Communications	TrendServer Software utilizes the Honeywell Trendbus communication protocol for real time network communications with the V5 recorders. The X Series and GR recorders use the Modbus protocol only.
Modbus	Modbus protocols supported on Ethernet and Serial ports (RS485) The Comms Server is a MODBUS master. It has no slave capability. The maximum speed of data transfer over MODBUS is 1 (one) reading per second. The maximum speed of data logging of realtime MODBUS data is 1 (one) reading p/S. The Modbus protocol can be used to connect with other devices that support floating point values in their register maps.
Communications - X Series and GR Series	Communicate with up to 256 units on RS485. Ethernet/RS485 communications. Communicate with recorders using Ethernet TCP/IP. FTP Ethernet connection to transfer data and setups to and from an X Series/GR recorder (TrendServer only).
OPC Capability	Optional OPC Server broadcasting, for each pen: Current Value; Engineering units; Zero; span; High EU; low EU; for communication with HMI software that supports and OPC 2,0 Client V2, and DA compliant.
OPC Historian	A Windows-based Client application is be used toview and access historical data from Trendview OPC Historian Server.
Time Synchronisation (V5)	For Honeywell recorders connected in Real-time mode with Trendbus, every 5 minutes; For FTP transfer, at the end of each scheduled download. The recorders clocks are synchronised to the PC clock.
Time Synchronisation - X Series and GR Series	Simple Network Time Protocol (SNTP) is a protocol for synchronising the clock on the recorder with a Network Server. Or a recorder can be enabled as a server, other recorders, set up as clients, can synchronise their time to the server recorder. Min time period between checking and updating the time is 600 seconds.
Software License (Users)	Available as a Single or Five User license, the license is based on the number of PC's the software is installed on, not the number of users using a particular PC with the software installed on it
Data Import Capability	Provides ability to import data files from many Honeywell Recorders, see "Trend- Manager Pro Features" on page 4.
Databases	Databases can be local (on same PC as TrendManager Suite), remote (on different PC), allows the data to be available to other Trend Server Pro users
Password (TrendManager Suite)	Five levels of users – Guest or Default User, Basic User, Standard User, Power User or Administrator, Eight area of access with ability to password protect functions within these areas – Graphing, Folders, Recorders, Database, Server, Import, Communications and Settings. 50 Users with their own password allowed
Audit Manager	Available on TrendServer Pro and is accessed through the password system at the Administrator level, allows the Administrator to configure, log and view all actions that have occurred within the software
Printing	Network printing of graphs using either a Standard Print format or Legend Print format.

Sales and Service

For application assistance, current specifications, pricing, or name of the nearest Authorized Distributor, contact one of the offices below.

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